

and synovial membrane. The second type, arthritis deformans atrophica, is characterized by regressive changes in the cartilage and bone, which indeed is common to both varieties, but is completely lacking in the productive alterations. The conditions are often associated with a fibrous metaplasia of the bone-marrow, the bone, and the cartilage. This metaplasia is, however, much more common and much more extensive in the atrophic variety. Transition stages between the two varieties are seen. The changes are regarded as a local reaction to a pathological stimulus which results from a severe general infection of the body. Both types have the same etiology and are most frequently associated with tuberculosis or carcinoma. The hypertrophic type is a disease of elderly people, is rarely seen before the forty-fifth year, and is more frequently seen in men than in women; the atrophic type is a disease of youth and middle age, rarely occurs after fifty-five years, and is more frequent in women.

Aortitis and Spirocheta Pallida.—An important finding has been made by REUTER (*Zeit. f. Hyg. u. Infekt.*, 1906, 49) which strengthens the idea regarding the syphilitic origin of a certain type of aortitis associated particularly with the names of Döhle and Heller. In a characteristic specimen of this variety of aortitis, which involved the ascending arch of the aorta of a man who died from occlusion of the coronary artery, Reuter found, by using Levaditi's method of staining sections, typical examples of spirochete. They lay not in the media but in the thickened intima. No definite history of syphilis was obtained, but a scar was discovered at autopsy on the prepuce. In view of the increasing evidence to show that *Spirocheta pallida* is the cause of syphilis, Reuter considers that the presence of the organism in this peculiar type of aortitis strengthens the opinion that the condition is syphilitic in nature. To show that the spirochete may be present in tertiary lesions he describes a case in which the organisms were found in great numbers in a gumma of the lung.

Fermentative Fat-splitting in the Stomach.—HENISHEIMER (*Arbeiten a. d. path. Inst. z. Berlin*, 1906, p. 506) records a number of experiments to show that the glands of the stomach secrete during digestion, a ferment body which is capable of splitting neutral fats. To determine the amount of fat which is split he has used the Volhard method. This consists in mixing the gastric juice with egg-yolk, digesting with a few drops of toluol at 37° C. for twelve to twenty-four hours, extracting with ether and alcohol, and determining the acidity of the ethereal extract. All observations were controlled with boiled gastric juice. The experiments were carried out upon dogs with the various Pawlow's fistule. By this means the influence of regurgitating intestinal and pancreatic juices was excluded. The results of the experiments showed that the gastric juice contained a fat-splitting ferment acting upon neutral fats best in an acid medium. The ferment is produced by the glands in the mucous membrane of the fundus. The lipase is present only in fresh gastric juice, for when the gastric secretion is kept for a short time, even on ice, the fat-splitting power disappears. The lipolytic action was also determined for human gastric juice. At least 25 per cent. of the neutral fat was split, and 20 per cent. of this was thought to be due to ferment action. The lipolytic action became more pro-

nounced with the increase of the gastric secretion. The lipase was decreased in a case of subacid gastritis, and absent in a case of achylia gastrica, and a case of carcinoma of the stomach.

The Pathology of Lymphatic Leukemia.—General opinion has changed from one viewpoint to another regarding the etiology and pathogenesis of lymphatic leukemia until at present arguments are being brought forward to show that the condition is allied to a tumor growth. GULLAND and GOODALL (*Jour. Path. and Bact.*, 1906, xi, 333) have recently studied ten cases of lymphatic leukemia and two cases of chloroma previously reported by Dunlap and Bramwell. They consider that acute and chronic leukemia are essentially the same condition, and that there is no histological difference between them and the affections known as chloroma. They point out that the bone-marrow is always extensively affected, while the incidence of lymphatic infiltration elsewhere is exceedingly varied. The spleen and lymph glands are most enlarged in the most chronic cases, whereas in some instances the lymph glands are uninvolved. In the lymph glands the geminal centres are generally absent and in the spleen the Malpighian bodies are atrophied. Arguing from these points and the observations of others, Gulland and Goodall conclude that the bone-marrow is the starting-point and essential seat of the disease. Actively proliferating cells from the marrow are carried by the blood to other tissues and organs, where they multiply actively, as may be seen in sections, and thus produce the packing of glands and infiltration of organs with lymphocytes. Even the formation of lymphoid new-growths in a variety of tissues may occur. The excess of cells is associated with phagocytosis of lymphocytes in glands, spleen, and other organs, including the marrow itself. By the excessive production of lymphocytes in the marrow the available space for red cell formation is crowded out. The decrease of the erythroblastic tissue gives rise to a smaller production of red cells and to a varying and frequently extreme degree of anemia.

Gulland and Goodall suggest that the bone-marrow proliferation is due to a disturbance of the mechanism governing cell production rather than to a response to chemiotaxis in the ordinary sense. The condition may thus be considered a disturbance in nutrition, which, in the present state of our knowledge, cannot be distinguished in its results from tumor growth, although the initial change is probably more widespread than is usual in ordinary tumor formation.

Schultz (*Ziegler's Beiträge*, 1906, xxxix, 252) from the study of a case of acute lymphatic leukemia comes to much the same conclusions. In his case the bone-marrow was most affected, and he considers that in this organ was the seat of the disease. The proliferating marrow cells arrive in the blood stream and are carried to the various organs. Where the conditions are favorable the cells proliferate in the organs, forming limitless tumors, which, on their part, produce cells and throw them out into the circulation, thus giving rise to a vicious circle.

Although Veszprini (*Virchow's Archiv.*, 1906, clxxxiv, 220) does not consider acute lymphatic leukemia as a true tumor, he likens the process in certain particulars to a new-growth. In three cases of the large cell type he found the bone-marrow especially affected, and regards this organ as the original seat of the disease. A cell peculiar to the bone-